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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,538	04/12/2001	Yuichi Takamine	36856.463	4327

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Keating & Bennett LLP
10400 Eaton Place, Suite 312
Fairfax, VA 22030

EXAMINER

SUMMONS, BARBARA

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,538

Applicant(s)

Takamine

Examiner

Barbara Summons

Group Art Unit

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— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 (three) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 2/24/03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-22 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1, 4, 8, 12, 16 and 20-22 is/are rejected.
- ☒ Claim(s) 2, 3, 5-7, 9-11, 13-15 and 17-19 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☒ The proposed drawing correction, filed on 2/24/03 is ☒ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 8
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 2/24/03 have been approved, and the substitute sheets have been entered.

Terminal Disclaimer

2. The terminal disclaimer filed on 2/24/03 has been reviewed and is accepted. The terminal disclaimer has been recorded.

New Grounds of Claim Rejections - 35 USC § 102

3. The indicated allowability of claims 4, 8 and 21 is withdrawn in view of the newly discovered reference(s) to Takahashi JP 9-326661 (cited by Applicant on the IDS received 12/10/02). Rejections based on the newly cited reference(s) follow.
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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4, 8, 12, and 22 are rejected under 35 U.S.C. § 102(b) as being anticipated by Takahashi JP 9-326661 (cited by Applicant).

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Basically, the Examiner agrees with the conclusion of the Japanese Office action and art provided with the IDS received 12/10/02 for reasons as follows:

Figs. 1 and 2 of Takahashi disclose a longitudinally coupled resonator-type surface acoustic wave (SAW) filter comprising: a 36° LiTaO₃ piezoelectric substrate (see col. 3, ln. 46); at least three interdigital transducers (IDTs)[see Fig. 7]; wherein, due to the increased width of the adjacent electrode fingers 16 and 17 of two IDTs 12 and 13, the period between the outermost/right-side electrode finger 16 and the IDT 12 electrode finger adjacent thereto, will be different from (i.e. slightly larger than) the period between the remaining electrodes in IDT 12. Similarly, the period between the outermost/left-side electrode finger 17 and the IDT 13 electrode finger adjacent thereto, will be different from (i.e. slightly larger than) the period between the remaining electrodes in IDT 13.

Regarding claim 4, AL is defined as slightly larger than 0.5λ , but this is before adjusting the center of the electrode fingers 16 and 17 to reflect the wider widths (see Fig. 2). Therefore, a center distance between adjacent electrode fingers of the adjacent IDTs is “substantially equal to” 0.5λ times the slightly larger period in the first portion. Regarding claim 8, the total number of fingers in the first portion is only two. Regarding claim 22, the filter itself is a communication apparatus, and the filter is a bandpass filter (see Fig. 6 and the last three lines of the abstract).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 16, 20 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi JP 9-326661 (cited by Applicant) taken together with Kawakatsu et al. U.S. 5,568,002 (of record).

Takahashi discloses the invention as discussed above, except for disclosing a multi-stage filter or a filter with balanced-unbalance or balanced-balanced input/output.

Kawakatsu et al. discloses that it is known to provide multi-stage filters (see Fig. 2), filters with balanced-balanced input/output (see Fig. 2 or Fig. 11), and filters with balanced-unbalanced input/output (see e.g. Fig. 1B).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the SAW filter of Takahashi (Fig. 7) such that it would have been a multi-stage filter with balanced-balanced or balanced-unbalanced input/output as taught, for example, by Kawakatsu et al. (Figs. 1B and 2), because such an obvious modification as adding another filter stage would have improved filter selectivity, as would have been known by one of ordinary skill, and because such obvious modifications as balanced-balanced or balanced-unbalanced input/output terminals would have been dependent upon the specific use of the filter (i.e. whether it was to be connected to a balanced or unbalanced device) and would have been a routine modification in the art as suggested by Kawakatsu et al. (see col. 5, lns. 57-60).

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It would have been equally obvious to one of ordinary skill in the art at the time the invention was made to have modified the balanced-unbalanced SAW filter of Kawakatsu et al. (Fig. 1B) or the balanced-balanced multi-stage filter of Kawakatsu et al. (Fig. 2) such that the adjacent portions of adjacent IDTs would have had a different finger period than the remaining portions of the IDTs as taught, for example, by Takahashi (cited by Applicant), because such an obvious modification would have provided the benefits of widening the bandwidth without a deterioration of the insertion loss as explicitly suggested by Takahashi (see the abstract, lns. 3-5 and the last five lines thereof).

Allowable Subject Matter

8. Claims 2, 3, 5-7, 9-11, 13-15 and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose a longitudinally coupled SAW resonator filter having each of the specifically recited combinations of features, especially those features recited in the allowable dependent claims, those features being too numerous to mention individually.

10. Because the prior Office action mailed 10/15/02 included only Double Patenting rejections and no prior art rejections, Applicants did not put forth any arguments, and therefore, no further response by the Examiner is considered necessary at this time.

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Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bauer et al. WO 00/25423 and its English language equivalent U.S. 6,420,946 each disclose longitudinally coupled SAW resonator filter (see Fig. 1) wherein the period in the portions of IDTs adjacent to another IDT have a finger period that is smaller than that in a remaining portion (see '946 col. 5, lns. 30-42). This reference is not used in a rejection because the finger period is continually decreasing (ibid.) and not constant at " $\lambda/2$ " as required by claim 1 (see the last three lines thereof).

12. Any inquiry concerning this communication should be directed to Barbara Summons at telephone number (703) 308-4947, FAX no. (703) 308-7724, receptionist's no. (703) 308-0956, Supervisory Examiner Bob Pascal (703) 308-4909.



Barbara Summons
Primary Examiner
Art Unit 2817

bs
May 18, 2003